



US 20060109256A1

(19) **United States**(12) **Patent Application Publication****Grant et al.**(10) **Pub. No.: US 2006/0109256 A1**(43) **Pub. Date: May 25, 2006**(54) **HAPTIC FEEDBACK FOR BUTTON AND SCROLLING ACTION SIMULATION IN TOUCH INPUT DEVICES****Related U.S. Application Data**

(60) Provisional application No. 60/616,648, filed on Oct. 8, 2004.

(75) Inventors: **Danny A. Grant**, Montreal (CA);
Pedro Gregorio, Verdun (CA); **Robert W. Heubel**, San Leandro, CA (US);
Christophe Ramstein, San Francisco, CA (US)**Publication Classification**(51) **Int. Cl.**
G09G 5/00 (2006.01)
(52) **U.S. Cl.** **345/173****Correspondence Address:****David B. Ritchie**
Thelen Reid & Priest LLP
P.O. Box 640640
San Jose, CA 95164-0640 (US)**ABSTRACT**

A planar touch control is used to provide input to a computer and haptic feedback is provided thereto. A touch control includes a touch input device with a planar touch surface that inputs a position signal to a processor associated with the computer based on a location of user implemented contact on the touch surface. The computer can position or modify a cursor or image in a displayed graphical environment based at least in part on the position signal, or perform a different function. At least one actuator is also coupled to the touch input device and outputs a force to provide a haptic sensation to the user via the touch surface.

(73) Assignee: **Immersion Corporation, a Delaware Corporation**(21) Appl. No.: **11/249,031**(22) Filed: **Oct. 11, 2005**